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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,602	02/08/2006	Masao Nakagawa	2006_0132A	2015

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SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

PHAM, TUAN

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/567,602

Applicant(s)

NAKAGAWA ET AL.

Examiner

TUAN A. PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5-7 is/are rejected.
- 7) ☒ Claim(s) 3, 4 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 02/08/2006 has been considered by Examiner and made of record in the application file.

Drawings

3. The drawing submitted on 02/08/2006 has been considered by Examiner and made of record in the application file.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Periyalwar et al. (Pub. No.: US 2004/0192204, hereinafter, "Periyalwar") in view of Akin et al. (Pub. No.: US 2004/0013101, hereinafter, "Akin").

Regarding claim 1, Periyalwar teaches a radio communications apparatus which constructs an ad-hoc network with other radio communications apparatuses existing therearound to wirelessly communicate with the other radio communications apparatuses (see figure 3, [0006-0008]), and wirelessly communicates with base station equipment of a mobile communications network (see figure 3, base station 31, [0006-0008]); the radio communications apparatus having a first communications path for directly communicating with the base station equipment (see figure 7, UE 73, base station 71, direct path 73b, [0050-0054]) and a second communications path for communicating with the base station equipment via another radio communications apparatus within the ad-hoc network (see figure 7, UE 73, base station 71, path 72a and 73a via a relay 72, [0050-0054]), as communications paths to the base station equipment, and communicating with the base station equipment using a communications path specified by the base station equipment among the first communications path and the second communications paths (see figure 7, [0050-0054], the router at the BS decided the which path is routed).

It should be noticed that Periyalwar fails to teach TDD-CDMA system. However, Akin teaches such feature (see [0014-0015]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Akin into view of Periyalwar in order to share by both uplink and downlink direction during different time slots as suggested by Akin at [0015].

Regarding claim 6, Periyalwar teaches a radio communications apparatus which constructs an ad-hoc network with other radio communications apparatuses existing therearound to wirelessly communicate with the other radio communications apparatuses (see figure 3, [0006-0008]), and wirelessly communicates with base station equipment of a mobile communications network (see figure 3, base station 31, [0006-0008]); the radio communications apparatus having a first communications path for directly communicating with the base station equipment (see figure 7, UE 73, base station 71, direct path 73b, [0050-0054]) and a second communications path for communicating with the base station equipment via another radio communications apparatus within the ad-hoc network (see figure 7, UE 73, base station 71, path 72a and 73a via a relay 72, [0050-0054]), as communications paths to the base station equipment, and communicating with the base station equipment using a communications path specified by the base station equipment among the first communications path and the second communications paths (see figure 7, [0050-0054], the router at the BS decided the which path is routed).

It should be noticed that Periyalwar fails to teach TDD-CDMA, TDMA, OFDM system. However, Akin teaches such feature (see [0014-0015]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Akin into view of Periyalwar in order to share by both uplink and downlink direction during different time slots as suggested by Akin at [0015].

6. Claims 2, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Periyalwar et al. (Pub. No.: US 2004/0192204, hereinafter, "Periyalwar") in view of Akin et al. (Pub. No.: US 2004/0013101, hereinafter, "Akin"), and further in view of Iwamura et al. (Pub. No.: US 2002/0114286, hereinafter, "Iwamura").

Regarding claims 2, 5, and 7, Periyalwar teaches a radio communications apparatus which constructs an ad-hoc network with other radio communications apparatuses existing therearound to wirelessly communicate with the other radio communications apparatuses (see figure 3, [0006-0008]), and wirelessly communicates with base station equipment of a mobile communications network (see figure 3, base station 31, [0006-0008]); the radio communications apparatus having a first communications path for directly communicating with the base station equipment (see figure 7, UE 73, base station 71, direct path 73b, [0050-0054]) and a second communications path for communicating with the base station equipment via another radio communications apparatus within the ad-hoc network (see figure 7, UE 73, base station 71, path 72a and 73a via a relay 72, [0050-0054]), measurement means for

measuring, for each of the first communications path and the second communications paths, power required for transmitting a signal and delay time required for the transmitted signal to reach a communication counterpart (see figure 7, [0050-0062], the router at the BS is based on power and delay); and communications path selection means for selecting at least any one of the first communications path and the second communications paths as a communications path to be used for communications with the radio communications apparatus (see figure 7, [0050-0054], the router at the BS decided the which path is routed), based on the measured values of the power and the delay time and the radio communications apparatus communicates with the base station equipment using the communications path notified by the base station equipment (see figure 7, [0050-0062], the router at the BS is based on power and delay).

It should be noticed that Periyalwar fails to teach TDD-CDMA, TDMA, OFDM system. However, Akin teaches such feature (see [0014-0015]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Akin into view of Periyalwar in order to share by both uplink and downlink direction during different time slots as suggested by Akin at [0015].

Periyalwar and Akin, in combination, fails to teaches notifying the radio communications apparatus of the selected communications path. However, Iwamura teaches such features (see [0377, 0401]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Iwamura into view of Periyalwar and Akin in order to save time and to pick a best path for transmission.

Allowable Subject Matter

7. Claims 3-4, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Rosener et al. (U.S. Pub. No. 2002/0028655), Li et al. (U.S. Pub. No. 2006/0040670), Krishnamurthy et al. (U.S. Pub. No. 2003/0053424), and Kim (U.S. Pub. No. 2004/0072568) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Pham whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:30 AM-5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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April 7, 2007
Examiner



Tuan Pham

Supervisory Patent Examiner
Technology Center 2600



Matthew Anderson